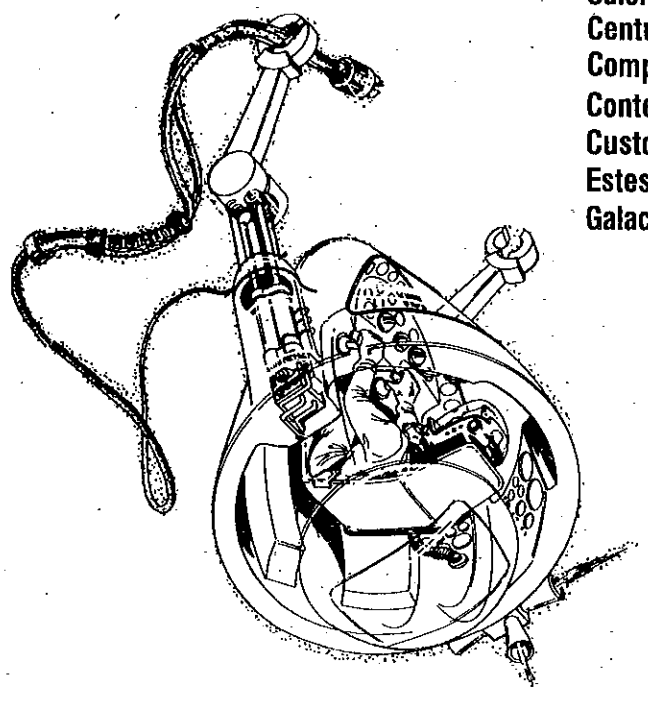
AVI
astroport
MINERAL POINT, WI. 53565

THE ENCYCLOPEDIA OF MODEL ROCKETRY AND Space Modeling

1976 CATALOG
$1.00

AEROSPACE PRODUCTS FOR RESEARCH EDUCATION RECREATION



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Listing of Contents

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ORDER FORM & QUESTIONNAIRE

AVI ASTROPORT 1976 QUESTIONNAIRE

If you have not filled out this questionnaire for us before, we ask that you take a few minutes and do so. Answer only the ones you want to; its ok to leave as many blank as you want.

1. Where did you discover AVI ASTROPORT? _____
2. Please list your other hobbies _____
3. How many rockets have you built? _____
4. Which rocket do you like best, second, third, etc.
   _____
5. What do you like best about AVI ASTROPORT? _____
6. What do you think AVI ASTROPORT should do to improve its products and services? _____
   _____
7. Do you have a favorite item you would like to see us make? _____
   (Include a separate piece of paper with a description.)
8. Do you build model airplanes? _____ Model cars? _____
9. Do you read science fiction? _____ Written any? _____
10. Have you told your science teacher about AVI ASTROPORT? _____
11. Are you a member of a local rocket club? _____
12. How many friends fly model rockets? _____
13. Do you collect stamps? _____ Coins? _____
14. Do you enter contests? _____ Which ones have you entered? _____
    _____

Feel free to expand on any of your answers using additional paper. We like to hear from you.

GALACTIC FRATERNITY

I am not currently a Galactic Fraternity member. My order is over ten dollars and I wish to receive my own GF identification number and card and enjoy the benefits of the organization.

_____
Signature

NAME _____ AGE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

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MODEL
ROCKETRY
EQUIPMENT

AVI
astroport

MAIL ORDER CATALOG

1976 1st Edition

"SPACE COLONIES"

New Items

"GOLD" Series
ROCKET MOTORS

MICROJETS &
D, E AND F TYPES

TOOLS and SUPPLIES

Monthly
DESIGN CONTESTS

$1.00

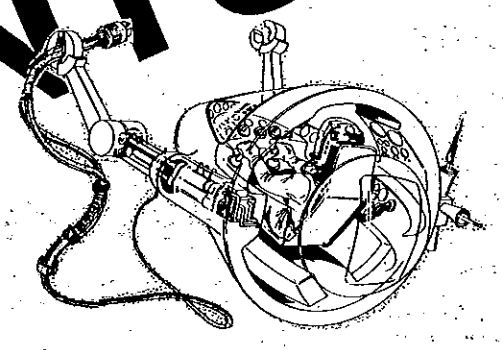
Your Satisfaction Is Guaranteed

Or Your Money Will Be Refunded

THIS CATALOG CANCELS ALL EARLIER OFFERS ..... PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE

2 FINS NATIONAL ASSOCIATION OF ROCKETRY SPACE 1999
STAR TREK SAFETY FAI SCIENCE PAYLOADS ALTITUDE
RESEARCH GALACTIC FRATERNITY
CLUSTER
ZVPL AEROSPACE EDUCATION LAUNCH PAD
SUPER SCALE
SPACE STICKERS PARACHUTES FLYING MODEL ROCKETRY

WE OFFER YOU ADVENTURE



Space Colonies? The cover of this catalog is artwork that was created as a result of a conference held during the summer of 1975 where distinguished scientists continued to study the feasibility of beginning work on constructing self sustaining orbiting communities using only the technologies, materials and energy resources that are available to us today.

We are not talking about a thousand years in the future, or one hundred, but rather within the next decade or score years.

This is the type of ***adventure*** that could await you in the future if you prepare for it. It will represent, however, only one of the vast array of scientific and technological adventures that are being born today.

This catalog addresses itself to ***you*** in the world of today. The adventure that is at hand is involvement in a branch of aerospace science and technology known in the United States as Model Rocketry or internationally as Space Modeling.

The hobby has developed in parallel with the exploration of space by unmanned and manned vehicles. Many of the same problems that face space exploration are found in model rocketry; we apply many of the same principles to attempt to solve them.

Space modeling is a science and technology in its own right and has constraints other than what space engineers must contend with.

The big difference between model rocketry and Space Exploration is that ***you can participate directly*** in Space Modeling beginning today. Maybe tomorrow you can become a Space Colonist.

AVI Astroport Provides the "Tools".....

Every discipline has certain elements that bind it to and/or set it apart from other areas of endeavor. Model Rocketry or Space Modeling has a specific set of 'tools' that are useful or required to participate in it fully. We are using the word tools in a very broad sense. In effect we are classifying all the elements that are of a physical or material nature and even less tangibles such as vocabulary, certain concepts, and some direction, as 'tools'.

Without the addition of the skills and devotion of our fellow rocketeers, however, the field of Model Rocketry (Space Modeling) would cease to exist. The application of those skills enables Space Modeling to evolve and grow. And the interplay between Rocketeers are forming a solid base for the relatively new science and technology of Space Modeling.

Some of the vocabulary of this field appear at the top of this page and the following one. If one or more of the subjects listed there catch your interest then we believe we have something to offer you.

AVI Astroport is a commercial firm that must stand or fall on the merit of the concepts, products and services that it provides. We are heavily dependent on the impression we make on you and the rest of the Space Modeling community. We solicit your comments on our approach to serving your needs, on the service itself and on each and every product represented in this catalog whether produced by us or simply distributed by AVI Astroport. In all cases we will attempt to answer your letters promptly.

One of the strengths of our organization is the fact that ***we believe in you, our customer,*** the end user of our products and services. Your support of our organization and our support of your activities will very likely be at a level that you have not experienced with a commercial firm before. I know that many of you who are reading this are old and valued customers and supporters and I'm sure that what I am saying is ringing true. ***Truly, you, our customers, are AVI Astroports best advertising.*** We rely heavily on you to spread the word about us.

This issue of our catalog has been expanded by a factor of more than two in page count. The actual page size has been reduced but each page contains as much or more information as the previous full newspaper size page.

There is an effort to organize the material in a form of logical sequence and we will outline it here.

This page and page three cover the basics of model rocketry. On page four and five we have both the starter set and our launch controller and launch pad advertised, and on the lower half of each page a suggested sequence to approach the hobby for an individual or a group such as a class or club.

The six following pages contain a listing of some of our MPC and MRI kits. Page 12 contains general information on model rocket motors, and the following page gives specifics on our ***Sport Model Rocket Engines.*** Pages 14 and 15 provide a great deal of information on our new ***Gold Series Engines.*** If you are at the level to use the Gold Series than you're already building, or contemplating to do your own designs — Custom Rockets; so the next two pages discuss the elements involved there.

At this point we feel it is fitting to give a two-page presentation on the National Association of Rocketry, and we strongly recommend you to join and support this organization.

Page 20 gives a partial listing of our parts available for custom building. Page 21 contains information and a listing of ***Astrocommunications*** products, and a small article on my activities that predated formal model rocketry.

Pages 22 and 23 list the AVI Astroport Metrix System. The release of this line has come slower than we anticipated and it will be some time before all sizes are available. If you order sizes that are not in stock then you will receive a credit slip that can be applied to your next order or redeemed for cash.

On page 24 we have included many materials that have not been available in a model rocketry catalog before. The metal parts are intended for construction of support and display models and are obviously not intended for flight hardware. The structural wood parts are of particular note. The facing page contains a listing of primarily X-acto tools at favorable prices.

We have devoted two pages to the products of Competition Model Rockets as we have made arrangements with Col. Kuhn enabling us to market his products through our catalog.

Next page display models are an important part of Space Modeling and have a proper place in our catalog. We will expand the list in future catalogs, hopefully with items not generally available through other sources.

Another aerospace pursuit is ballooning and so we have included a selection of ***Aerostats*** that can be simply constructed and flown. We feel that this hobby has considerable appeal and we are particularly interested in your comments on the idea.

Our listing of Space Stickers and Galactic Fraternity information face page 31 which is our introduction to the line of Estes Rockets, Engines and Supplies. Silence . . . . . That is what followed each time I told someone on the phone that we were including both the Estes and Centuri products in our new catalog. We ask you to think about it. We have sold both lines on and off for the last ten or eleven years, when special requests for their products were made by our customers. The concept benefits all concerned. We can provide a single source for the rocketeer that must buy through the mail, saving him duplication of postal charges. AVI Astroport is providing a 'clearing house' for model rocketry. We are introducing our customers to both of the Damon Corporation lines in a favorable manner. We have received advertising materials from one of the subsidiaries and an acknowledgement of our right to continue to sell their products from the other and from the Damon Corporate office. We thank them for their cooperation in this move that we believe is to the benefit of all.

On pages 34 and 35 we conclude our offering of AVI Astroport kits and on 36 and 37 have the listing of Centuri Products available from AVI Astroport.

Pages 38 and 39 contain a discussion of our proposed UFO kits and a listing of AVI Astroport bulk parts.

Two full pages are loaded with information and offerings of astrophilately and other items of interest to stamp collectors.

Contests, bonuses, calendar and GF membership information fill page 42 and on 43 we give a run down of ordering information, the index you requested and a general wrap up of this edition of the AVI Astroport catalog.

We hope that you understand now why we have called this edition of the catalog the ***Encyclopedia of Model Rocketry and Space Modeling.*** Although we admit it is not totally comprehensive, it is an effort in that direction. And if you question the appropriateness of the title, then we hope you will be convinced by subsequent issues.

There are the tools . . . . ***its time to begin the adventure.***

M. Bergenske
Take up our offer.

In the most basic terms Model Rocketry includes the building, launching and recovery of a rocket using procedures, techniques and materials or products to enable the activity to be conducted in a safe and rewarding manner.

This hobby has features that make it attractive to a wide range of adults and youth around the world. You may approach it in the simplist terms and eventually see yourself develop into an international competitor traveling to foreign lands to represent your country in World Space Modeling Championships. There are many other directions in which this fascinating pursuit may lead you.

Let us begin with some simple definitions.

the Model Rocket

"Model Rocket" means an aero model that ascends into the air without the use of aerodynamic lifting forces against gravity; that is, propelled by means of a model rocket engine; that includes a device for returning it to the ground in a condition to fly again; and whose structural parts are made of nonmetallic material. "Model rocket engine" means a solid propellant rocket engine produced by a commercial manufacturer in which all chemical ingredients of a combustible nature are preloaded and ready for use.

Model rockets shall comply with the following requirements prior to launch, operation and flight:

a. Gross weight, including the model rocket engine, shall not exceed 500 grams (1.1 pounds); (Note: Contest limit for NAR events is 453 grams.)

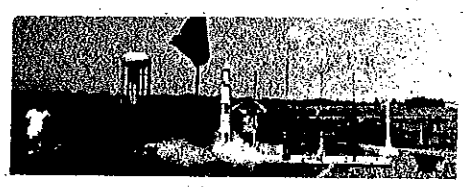
b. No more than 62.5 grams (2.2 ounces) of propellant materials shall be contained in a single model rocket engine and no more than 125 grams (4.4 ounces) of propellant shall be contained in a model rocket at the time of launch;

c. Model rockets shall be so constructed as to be capable of repeated flights, and shall contain means for retarding descent to the ground so that the structure shall not be substantially damaged and no hazard shall be created to persons or property on the ground;

d. Construction shall be of wood, plastic, paper, rubber or similar materials, and without any metal as structural parts;

e. Design and construction shall include attached aerodynamic surfaces or other suitable means which will provide stabilizing and restoring forces necessary to maintain a substantially true and predictable flight path;

f. A model rocket shall not contain any type of explosive or pyrotechnical warhead.



Mike Hadapp's Saturn V lifted off beautifully.

PHOTO COURTESY NAR
Model Rocketry Magazine

Rocket Engine

The model rocket engine is fully defined on page 12 of this catalog. It is a reaction motor that operates on the same principles that solid propellant engines used in the space program do. We depend on the same third law of motion of Sir Isaac Newton for the reaction resulting from the directed exhaust of incandescent gases from the nozzle to the rear to provide the reaction causing the motion of the vehicle (model rocket) upward.

The motors are designed to be launched electrically with special ignitor elements from a prescribed distance of ten or more feet from the launch pad.

Always remember that model rockets are not toys and that the model rocket engine is a ***real rocket engine.*** Treat it accordingly. Obey all safety rules.

ROCKET ENGINES BOOST GLIDERS STAMP COLLECTING
EGG LOFT
GOLD SERIES MULTI-STAGE DISPLAY BULK PARTS
SPACE MODELS
IMPULSE SAVING MONEY
METRIX SYSTEM COMPETITION BALSA WOOD TECHNOLOGY
TUBING SUPER ROC
STREAMER
SCIENCE FICTION PQ TRACKING AEROSTATS NOSE CONES
TOOLS

Building

Model rockets are fascinating. One of the most enjoyable aspects of the hobby is the construction of the rocket itself. Few model rockets come assembled, the majority are in kit form where your skill and proficiency determine the attractiveness and performance of the rocket in flight.

The simplest models have many features built into them to assure that even the inexperienced modeller will produce a rocket that is safe to launch, fly and recover.

There are different levels of complexity represented by the various kits available to the modeller. He should not attempt to build and fly something that is several steps beyond his or her capabilities. One step beyond . . . maybe, for part of the appeal of Space Modeling is the fact that you acquire skills, become proficient in the field itself. Space modeling gives you a chance to see your own abilities expanding and that is one valuable reward received from involvement in it.

PQ

Proficiency Quotient is defined as a number representative of the degree to which the Space Modeller has acquired the knowledge and skills to properly execute the physical and mental requirements to successfully use the product in the manner intended.

I realize that this is a loose definition and we hope to refine it more as we gain experience in its application.

As a beginning step we are assigning five levels of attainment as roughly defined below:

PQ 1: Novice or beginner with little or no previous experience in building model rockets or other modeling activities.

PQ 2: A person who has built several PQ 1 kits and flown them successfully or alternatively has constructed models from other disciplines that functioned as expected.

PQ 3: Working at this level would mean that the modeller had attained sufficient understanding of the principles involved to successfully construct anything at the lower levels on his own. By this time he should be familiar with all basic requirements of the hobby and should have confidence and skill to work with a limited degree of guidance dependent mainly on written instructions and illustrations.

PQ 4: Model rocketry has become firmly established in his mind as a science and technology where he can grasp more than just simple principles. A broader range of construction techniques and materials may be included in the kits. The operation of the rocket may involve multistaging, rocket or boost glider principles or any one of many other concepts. At this level the modeller should be capable of organization of his efforts to the point where he can take a scale kit and produce a model of fine workmanship that is representative of the full size rocket. He may be doing independent work that can add substantially to the hobby itself. ***He certainly should be an NAR member.***

PQ 5: The Space Modeller has reached a point where he can handle any challenge presented in the construction of model rockets. The kits he is capable of building have unusual features, mechanical systems, and/or a high degree of detail. Launching may require the simultaneous ignition of two or more rocket engines. He is designing and launching a variety of models that fall into any one or all of the broad categories of sport, demonstration, research and competition. Many of the projects in kit construction at level PQ 5 require weeks or months instead of hours or days.

If you have attained PQ 5 you should be a space modeller for life.

Launch System

All model rockets must be launched electrically from a safe distance as described on page five.

The AVI Astroport launch pad and hand controller meet the requirements as stated there, as do the others advertised elsewhere in the catalog.

The launch pad itself raises the rocket above the surrounding grass and provides a deflector for directing the hot gases away from the grass. The launch lug attached to the rocket must slide easily up and down the launch rod to assure the fact that the rocket takes off along the direction in which the rod is pointed. By the time the rocket leaves the rod end it should have sufficient velocity for the fin surfaces to provide stability so the rocket continues in the direction it was originally set.

The hand controller contains a safety key that should be removed at all times other than when a launch is eminent. When the key is placed in and the system is turned on a light assures you of the fact that the ignition system is properly connected before you give the count down and at zero push the launch button to convey the power to the ignition device that fires up the rocket engine and begins the launch. Immediately remove the key whether the launch was successful or there was a misfire.

See page five for more information on launching and the AVI Astroport System.

Flying

No model rocket may be launched, operated or flown except where approved by the authority having jurisdiction and only upon compliance with the following conditions:

a. There shall be a ground area whose shortest dimension is no less than one-fourth (¼) and the anticipated maximum altitude of the rocket(s) to be flown;

b. Flight areas shall be located in areas that will not create a hazard to persons and property in the vicinity of the area;

c. Flight areas shall not contain or be located adjacent to high voltage lines, major highways, multistory buildings or other similar obstacles;

d. The launch location shall be no closer than 25 feet to the boundaries of the flight area;

e. The flight location shall be approved by the authority having jurisdiction.

Recovery

Model rockets are required to carry a recovery device aloft on their flights.

Safe recovery can be accomplished in many ways and we will mention only a few of the more common methods here.

Parachute: One or more parachutes can be employed to bring the rocket back in one or more units. Many kits contain this most popular mode of recovery.

Streamer: A simple way to provide drag for reducing the speed of descent of a rocket is to attach a streamer to it. This type of recovery is common for small and light weight vehicles.

Glide: Certain configurations are designed to glide all or a portion of the rocket back to earth. There are many varients to this theme.

Instability: After the action of the ejection charge a reconfiguration of the rocket has taken place so that it cannot return in a given orientation so the rocket tumbles back to earth. Only for use with the lightest of rocket systems.

Rotational: Activitation of a device that will cause the rocket to expend its energy on the way down through a gyro action of all or a portion of the model.

AVI astroport
MINERAL POINT, WI. 53565

Safety Code

This is a most important section to read and to commit yourself to its enforcement and obeyance.

Model rocketry has enjoyed an enviable record of safety and will continue to do so with the cooperation of all involved.

This record has been recognized and endorsed around the world by hundreds of agencies and organizations. It is an accepted activity by the members and dependents of the Air Force Navy and Army of the United States of America, the Boy Scouts of America, the 4-H, the Civil Air Patrol, NASA employees and dependents and accepted by each Federal Agency of Record that is concerned with safety.

Our rockets are accepted in and flown in dozens of countries on every continent. They even were considered for a demonstration flight from the moon during the Apollo Lunar landings, as part of the educational demonstrations.

Chris Tavares checks over Don Larson's Mercury Dual Egglofter at the safety table.
PHOTO COURTESY NAR
Model Rocketry Magazine

Model Rocket SAFETY CODE

I am a model rocketeer and do not engage in any other form of non-professional rocketry. As a member of the NATIONAL ASSOCIATION OF ROCKETRY, it is my responsibility to keep model rocketry safe. Because safety is my watchword, I will obey this NAR Model Rocket Safety Code:

1. I will use only pre-loaded, factory-made commercial model-rocket engines that do not require my mixing of chemicals.
2. I will make model rockets of paper, wood, plastic, and other non-metallic materials.
3. I will always use a recovery device in my model rockets that will return them safely to the ground so that they may be flown again.
4. My model rockets will weigh less than 16 ounces and will contain less than 4 ounces of propellants in their engines.
5. My model rockets will contain no explosive warheads.
6. I will fly model rockets in open areas away from buildings and power lines.
7. I will check the stability of my model rockets before flying them so that their flight paths will be predictable.
8. I will use a remotely-operated electrical firing system to ignite and launch my model rockets.
9. I will use a launching device that is pointed within 30 degrees of the vertical.
10. My model rockets will not be flown as weapons against targets.
11. I will fly model rockets in good weather conditions only.
12. I know that model rockets share the air with other objects and must present no hazard to such objects.

The Safety Code of the
National Association of Rocketry

Develop Your Own Program

With the aid of the "tools" we have to offer you will be able to choose the direction you may want to take in Space Modelling.

Each of us comes from a different background and we each have strengths and weaknesses when we apply ourself to a given task or endeavor.

It is human to make the most of our strengths and play down our weaknesses. But it is wise to strive to eliminate those weaknesses and round out our capabilities.

Build upon the knowledge and interests that you have developed in the past and apply them to Space Modeling and Space Modeling to them, in each case expanding your personal strengths.

Earlier or current interests may have been in photography, electronics, journalism, stamp collecting or model railroading. Obviously you can continue these pursuits and also be a model rocketeer.

Take your knowledge of photography and apply it to recording images of rocketry activities or even by remote photography with a rocket launched still or movie camera (see page 32).

The field of electronics is wide open in Space Modeling. Design unique launching equipment, or instrumentation to be carried aloft to telemeter data back to earth (see page 21).

Involvement in an NAR Section (sanctioned rocket club) could lead to being the editor of the Section Newsletter, reporting activities and new developments in the field. You might even receive national recognition in the form of a LAC NAR Newsletter Award.

Many of our customers are stamp collectors, that interest may take a new direction with the addition of Space Topicals to your areas of interest. Postage stamps and covers chronicle the progress of man's ventures in space.

One of the intrigues of model railroading for me was the production of miniature replicas that echoed visually their full scale counterparts. I learned a great deal about the addition of detail to make my scale railroad models miniature works of art not only in my eye but in the eyes of others. Now you can apply that knowledge to the production of beautifully detailed space vehicles, either for static display or acknowledging the constraints of weight and materials you can use and the fact that it must fly properly to flying model rockets. The latter can be the most challenging of Space Modeling efforts.

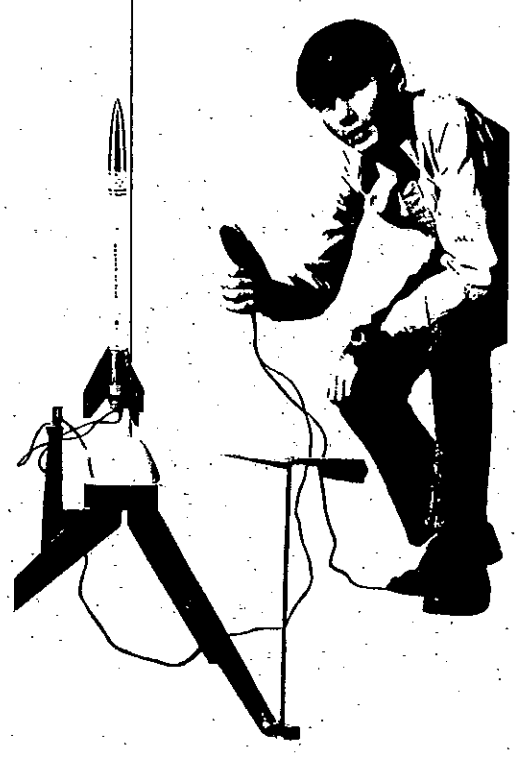
There are no hard and fast rules about the direction you must take at any point in your development as a Space Modeler. Make sure at every point in time that you realize there are many directions to take, there never should be a dull moment.

You can work independently in rocketry if you want to, but you will find it very rewarding if you have other modelers to meet and fly with. There are hundreds of thousands involved in the hobby at any given moment, and many millions who have been a part of it in the past, many waiting to be reintroduced to it.

A good way to get started is with our AVI Astroport Starter Set described on the following page, why not purchase it and .....

Begin Today

AVI astroport STARTER SET



Our generation has seen man begin his journey to the planets, and beyond. Already man has traveled to the moon, and plans to colonize it with a scientific community. Every mission brings these dreams closer to reality.

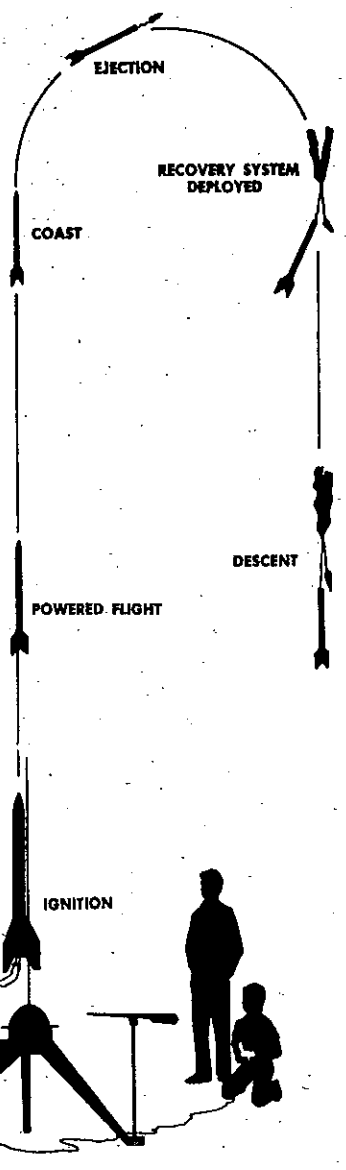
You may well participate in this thrilling adventure through model rocketry. Your MPC MODEL ROCKET OUTFIT includes all the components necessary for your own exciting launchings. This set was inspired by the scientific and technological advances being made today by the thousands of members who make up the nation's aero-space team. MPC has developed a model rocket program to meet the requirements of the ever expanding number of responsible youth and adults engaged in this most thrilling hobby.

You may prepare for, and control the launching and recovery of your rocket with much of the realism of an actual flight. As your model rocket sits poised on its launch platform, with your LAUNCH CONTROL in your hand, you begin the countdown. At T-O, a press of the button sends your rocket streaking into the sky under power of its own solid propellant engine. After burn-out the rocket coasts a few seconds to peak altitude, hundreds of feet in the air, and a recovery device deploys for a soft landing.

Schools throughout the country have endorsed model rocketry as an exciting, educational resource, bringing to the student, first hand the principals associated with aero-space flight.

Model rocketry is a hobby that can be enjoyed by the whole family. The following step by step instructions for the assembly of your model rocket kit and launch complex provide a clear and fresh approach to the captivating hobby you are now a part of.

This model rocket has been designed and developed to give you a straight high flight if the instructions are followed carefully. The exciting and educational sport of model rocketry has grown into a full scale national activity, and will continue to grow every time you fly your rocket safely. Formation of a rocket club in your area will provide you with hours of enjoyment even when you're not flying rockets. Look for our new models appearing on your dealer's shelves soon.



WEATHER CONDITIONS:

The best weather for flying model rockets successfully is clear, cloudless days with no wind blowing. Don't try to fly your model rocket if the wind is blowing more than 20 miles per hour. This is called a "moderate breeze" and raises dust and loose paper from the ground, setting small tree branches in motion as well. If you fly in a high wind, your model rocket will "weathercock" into the wind as it leaves the launcher, will fly far up-wind during its climbs, and will float far away down-wind after the recovery device deploys. You will lose your model rocket if you fly it in high winds.

You are also likely to lose your model rocket if you fly it in fog or when the clouds are low. If your model rocket flies into a cloud, you will lose it. And it has happened!

If you try to fly a white model rocket in a snow storm, you deserve to lose it!

SAFETY NOTES
READ AND FOLLOW CAREFULLY!

1. THIS MODEL ROCKET ENGINE IS NOT A TOY! Keep it out of the reach of small children and use it only with adult supervision.
2. All model rocket engines, no matter how small, must be used with caution and respect. They are intended for experimental and educational use only.
3. Store in a dry place at a temperature between 50°F and 150°F and away from other combustibles and open flames.
4. Do not tamper with a model rocket engine or attempt to change it in any way. It looks simple, but it is technically very complicated to design. Any change to the nozzle or paper casing could change the operating characteristics.
5. Do not point the nozzle of a model rocket engine at anyone's face and keep your fingers away from the nozzle. The temperature of the rocket exhaust gas is about 1000°F and it has a speed of about 1670 mph.
6. Use a model rocket engine only is lightweight, non-metallic recoverable model rockets specifically designed for them.
7. Use an electric ignition system such as the MPC Lunar Lectric Launch Controller. This is the only safe way to do it.
8. Use a vertically-pointed guide-rod launcher such as the MPC Lunar Lectric Launch Pad. Never try to fly a model rocket without using a launcher.
9. Do not attempt to re-load a used model rocket engine. It has been designed for a single use. Throw away the empty paper casing; don't give it to anyone and don't litter your flying field with it.
10. Read and follow all the provisions of the NAR Safety Code on the MPC Count Down Card. It was drawn up from the accumulated experience of professional rocket engineers and model rocketeers since 1957. Its purpose is to help you enjoy model rocketry and to learn about the Space Age in safety.

WHAT IS MODEL ROCKETRY?

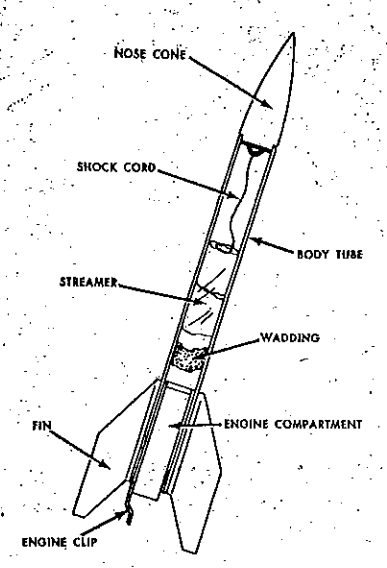
Model Rocketry is an international aerospace sport, a space age educational tool, a technological recreation, a hobby. It is recognized as such by many organizations: NASA, U.S. Air Force, the National Fire Protection Association, National Science Teacher's Association, American Institute of Aeronautics and Astronautics, National Aeronautic Association, the 51-Nation Federal Aeronautique Internationale, and various U.S. Government agencies.

WHEN DID MODEL ROCKETRY START?

Model Rocketry was born with the space age in 1957. Since that time, nearly 15,000,000 model rockets have been flown in the United States. 1957 also saw the start of the National Association of Rocketry (NAR), a non-profit organization formed for the purpose of guiding and encouraging the healthy growth of model rocketry as a hobby-sport throughout the United States.

WHAT IS A MODEL ROCKET?

Model Rockets are made of paper, balsa wood, plastic and other materials having high strength and low weight. Most model rockets weigh only a very few ounces. They use a factory-loaded, pre-packaged solid propellant rocket engine of high reliability. There is no handling or mixing of chemicals or explosives.

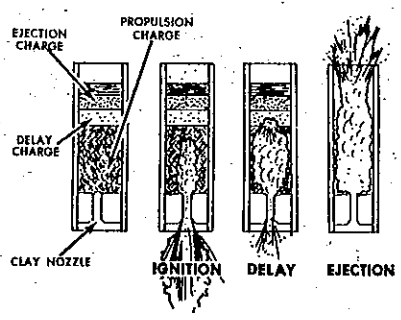


HOW DO MODEL ROCKETS OPERATE?

Model Rockets are launched electrically and soar to altitudes ranging from one hundred to over a thousand feet. After the rocket has reached its highest altitude, a recovery device is deployed which will lower it gently and safely to the ground so it can be used over and over again by installing a new rocket engine.

HOW DO ENGINES OPERATE?

The rocket engine is ignited electrically. An electrical current passes through the igniter to the solid propellant, creating gas pressure inside the engine. These gases, passing through the rocket nozzle, lift the rocket off the launching pad propelling it upward into a flight path. After the propellant has been expended, a delay charge is ignited, allowing the rocket to coast to its highest point. Following this, an ejection charge is ignited, forcing pressure forward. This pressure blows off the nose cone and deploys the recovery device.



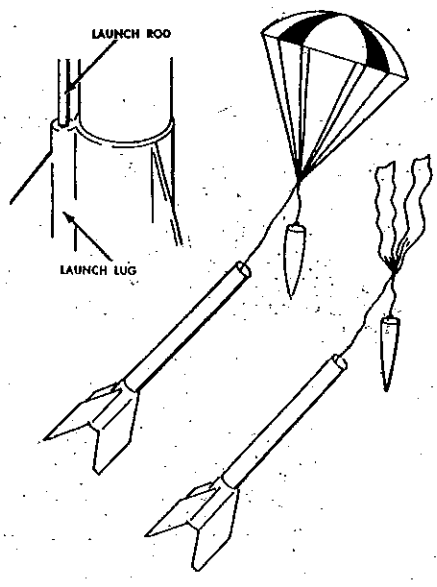
FLIGHT AND RECOVERY

The engine of a model rocket is only the propulsion unit, and although it plays a small part in the stability of a rocket, it is not the main factor. Flight stability must be achieved for proper performance of your rocket.

The launch rod and launch lug are two extremely important parts needed for stable flight. The launch rod guides the rocket during the first few moments of flight and is the rockets guidance system until sufficient speed has been obtained for the fins to come into effect. By the time the rocket has left the launch rod it has reached enough speed for the fins to take over guidance. The launch lug must be fastened securely to the rocket for this to be accomplished.

The length of the rocket in relation to the weight and size of the fins, are factors that determine stable flight. All MPC model rockets have been designed with this in mind, so you will always have a good, straight flight.

The recovery system of your PIONEER I is a streamer. This is the simplest and most reliable way of lowering a rocket safely to the ground. For larger and heavier rockets a parachute is used. The streamer or parachute should never be jammed into the rocket so that they cannot eject upon engine burn-out.



HOW SAFE IS MODEL ROCKETRY?

When common sense codes are followed, model rocketry has proven itself to be as safe as any other hobby and actually safer than Little League Baseball, model airplanes and swimming. It is so safe that the Insurance Company of North America provides public liability and property damage insurance in the amount of $3,000,000 to all members of the National Association of Rocketry (NAR) including minors. Since the insurance program started in 1964, there have been no claims paid against this INA insurance policy.

6 VOLT BATTERY also required

Eveready #732
Eveready #1463
Marathon #926
Ray-O-Vac #904
Mallory M904
Bright Star #164
Burgess TW2
Burgess 4F6H

SUPERIOR QUALITY & VALUE

AVI
astroport
MINERAL POINT, WI. 53565

Every model rocket requires a launch pad for a safe and stable flight.

The launch pad is the model's initial guidance system while it is still moving too slowly for the fins to exert their stabilizing effect. The launch pad also determines the model's initial direction of flight.

The AVI launch pad is a piece of GSE that you will use for years with all sorts of model rockets. You need to buy only one of them for all your model rocket activities from now on. So we've built in lots of features to make the AVI launch pad useful, durable, versatile, portable, rugged, and safe.

The sturdy tripod design provides a stable base on nearly all terrain.

There is a tilt-leg adjustment topped by a wind vane for programming the launch angle up to the permissible 30 degrees from the vertical. The wind vane helps you determine the surface wind direction right at the launch pad itself.

The launch rod is 1/8-inch in diameter and 36-inches long. This is the world standard for all small model rockets. It disassembles into two 18-inch lengths for easy transportation and storage.

An umbilical mast is part of one of the launcher legs. This provides a support for the electrical leads of the launch controller system and prevents their weight from pulling the igniter element out of the motor nozzle (a common cause of mis-fires).

The AVI launch pad comes in an easy-to-assemble kit. It breaks down quickly for compact transportation and storage in your range box.

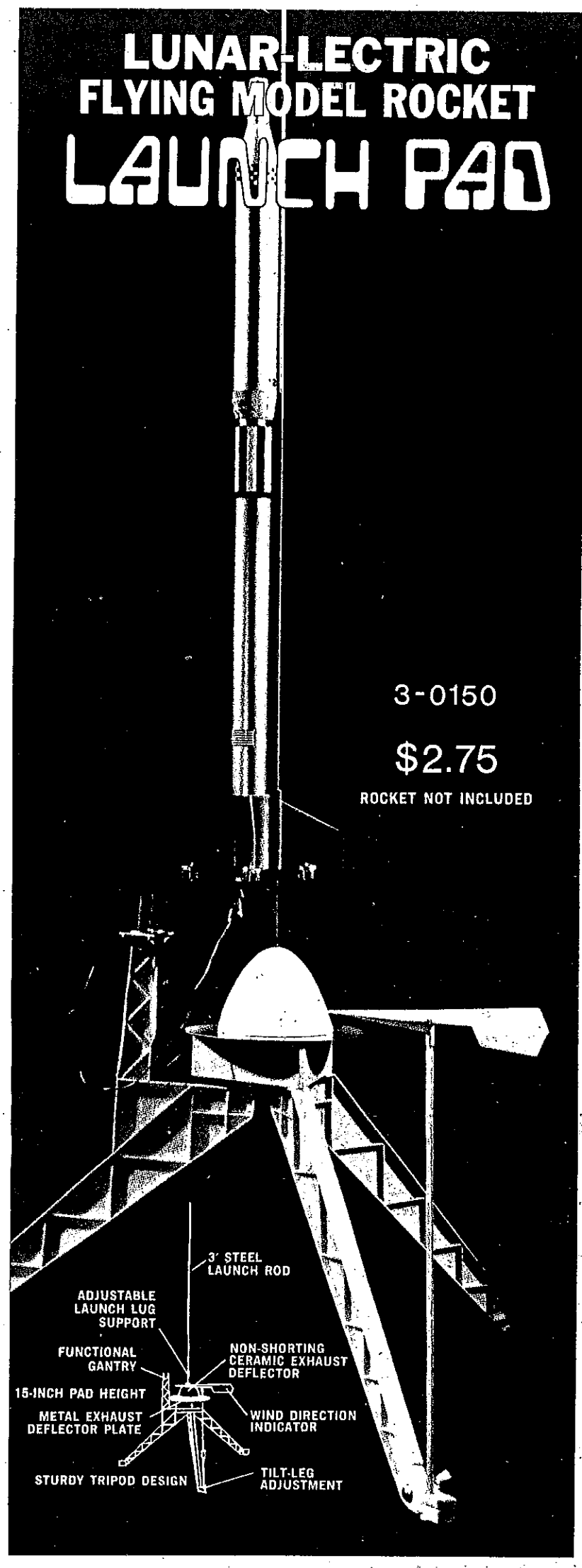
Its rugged durability and versatile usefulness have been tested and proven by years of hard use on club ranges.

LUNAR-LECTRIC FLYING MODEL ROCKET LAUNCH PAD

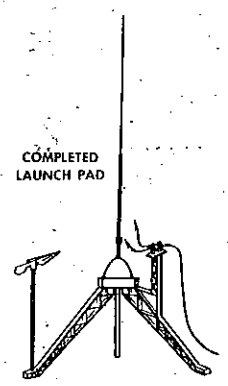
3-0150

$2.75

ROCKET NOT INCLUDED



COMPLETED LAUNCH PAD



Highest Quality at Low Prices

Recommended Batteries

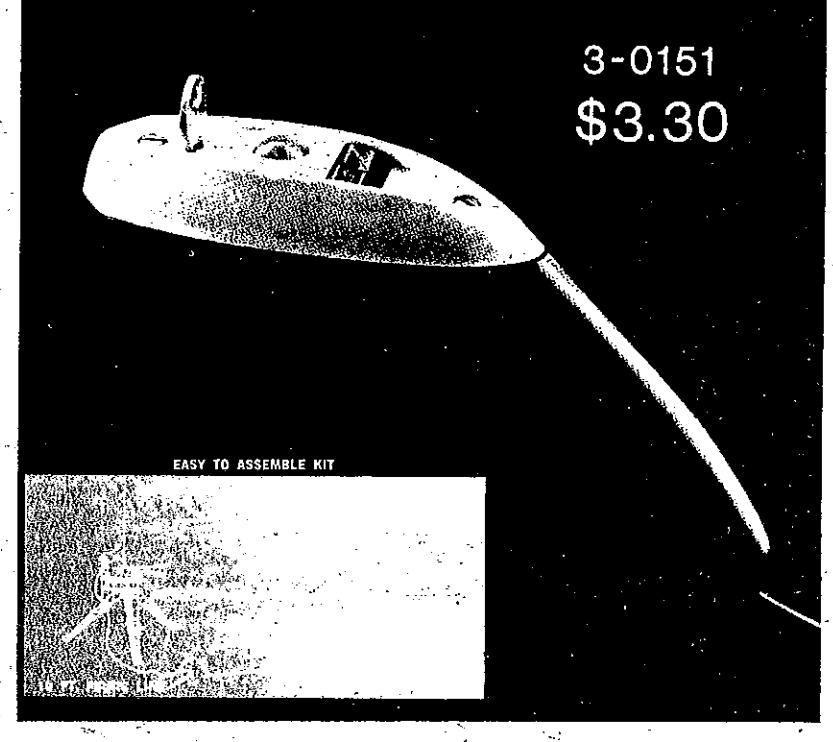
(Not Included)

Eveready #732 Lantern
Eveready #1463 Hot Shot
Marathon #926 or 904
Ray-O-Vac #904 or 922
Mallory M904
Bright Star #164 or #187
Burgess TW2 or S461
Burgess 4F6H or 2G8H

LUNAR-LECTRIC FLYING MODEL ROCKET LAUNCH CONTROLLER

3-0151

$3.30



EASY TO ASSEMBLE KIT

All model rockets are ignited by electrical means because this is the safest possible way to do it. National regulations and most local rules require electric ignition. The AVI Launch Controller provides you with a way to achieve safe, positive, reliable electric ignition.

The Controller has a handle-shape and is molded from high-impact plastic. It contains all necessary electrical safety features — recessed launching button, igniter continuity light, and safety key. The electrical launching circuit is not "armed" until the safety key is inserted and turned, and the continuity light indicates a go condition of the circuit. 15 feet of electrical cable is provided between the controller and the launch pad end of the cable. 10 feet of cable is provided for attachment to a high-capacity battery (not included). AVI recommends a list of commonly available power dry cells given in the instructions for positive ignition. However, an adapter is provided for plugging the system into the cigarette lighter receptacle of an automobile so that this high-capacity source can be used.

This rugged unit, field-tested under hard use for years by clubs, comes as an easy-to-assemble kit with no soldering required. You will use it for years with confidence in your model rocket launching activities.

CLASSROOM AND GROUP ACTIVITIES

Model Rocketry has proven its usefulness in many classroom situations. It has been taught as a portion of industrial arts at the junior high and senior high level. There have been thousands of mini-courses taught on the subject over just the last few years. Principles of physics, the laws of flight, the elements of design and pride in workmanship, cooperation and organization are a few of the subjects and goals it has been used to teach.

English teachers have used it as a focal point and source object for both creative and technical writing. Universities have used it to teach Power Mechanics and other disciplines.

There are high schools that devote whole semesters and even a year's program to model rocketry.

Hundreds, if not thousands, of rocketry clubs are affiliated with schools as part of their extra-curricular activities programs.

Every year more and more teachers are introduced to this fabulous teaching aid through workships and summer credit courses given by teachers colleges and state and private universities and institutions.

Inner city disadvantaged youth have been motivated constructively in many ways. One teacher related that model rocketry was the first subject that had ever caught the imagination of his students. "Building and flying a model rocket was the first project that many of my students have ever begun and carried to completion, either in a school environment or on the outside." "It has given them an appreciation of their own abilities to accomplish something in an area that was completely foreign to them. Some of the students that could not be goaded into writing a single sentence when previously required to write a theme; filled several pages describing in detail how they built, decorated, launched and recovered ***their rocket.*** With my encouragement they carried it further describing how they would relate their activities to the American Space Program." "Using your materials our program was conducted at a cost of less than $2.25 per student."

Rocketry has been demanded by classes of gifted children in all parts of the country, not just as a single course, but repeatedly year after year.

There are many fine resources available to the educator from AVI Astroport, and we work with each educator that contacts us asking for special assistance. We offer the widest range of products available on the subject and can fulfill your needs in the majority of cases. Price and cost is also a consideration for all educators. ***Our prices are the lowest available on most products. And we will send information on our special Academic Discount Program*** when requested by a teacher on school stationary.

Educators - remember you can purchase all the lines listed in this catalog at a discount from AVI Astroport.

We are also always happy to quote on other hobby and craft items that are not included in this volume.

AVI Astroport is your source for information and products related to aerospace education.

Rocketeers: Inform your teachers of AVI Astroport and the broad range of products and services and the discounts we can provide.

Many groups engage in model rocketry outside of the classroom. The Boy Scouts of America have many programs; Boys Clubs of America; Summer Camps of every description; Civil Air Patrol Wings; 4-H Clubs; YMCA and YMHA have active clubs; Neighborhood Houses; religious groups of every pursuasion; employee organizations of industrial firms; groups at the various NASA centers; and thousands of clubs formed by young and old alike in every state of the union; and of course, the National Association of Rocketry Sections spread from coast to coast.

There are just as many approaches to the subject as there are clubs but they all enjoy one thing in common — the adventure of Model Rocketry.

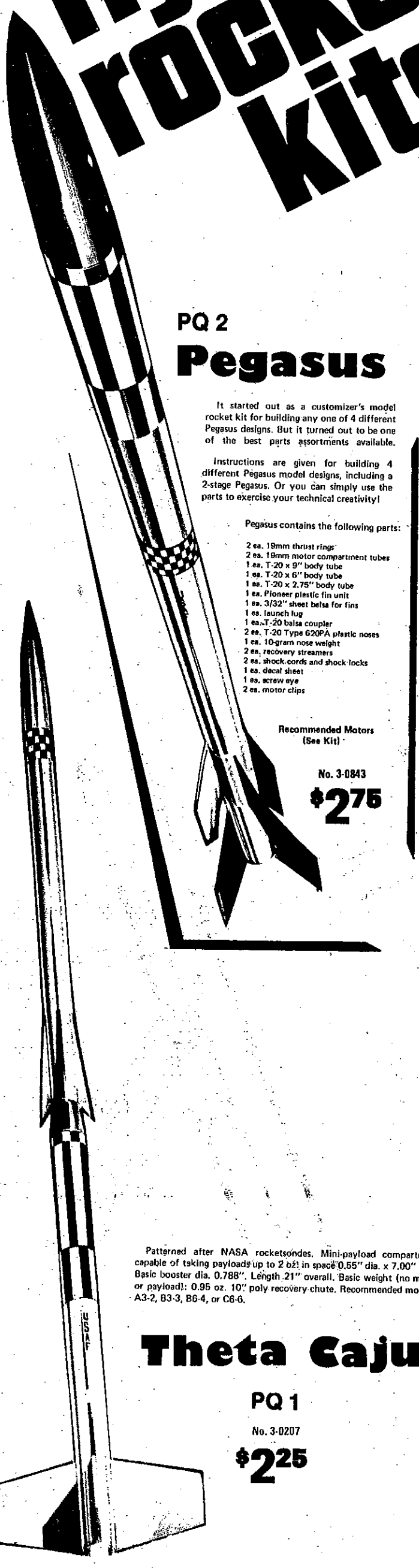
AVI Astroport believes that we will all receive more from the hobby if these independent organizations make sure that at least one member of theirs also holds a membership in the NAR. Ideally we would like to see each group become affiliated with the NAR as a Sanctioned Section (at this writing ten members would also have to be members of the NAR to form a Section).

If you have a club already operating AVI Astroport will be happy to put you in contact with other clubs whereby you will be able to share your experiences and each should strengthen the other.

Contact between clubs can keep fresh ideas coming forward and make your meetings stimulating and rewarding. You will be able to exchange newsletters and develop a sense of how really widespread the interest in Space Modeling is.

If you are starting a new club then contact AVI Astroport or the NAR directly for assistance.

flying rocket kits



PQ 2
Pegasus

It started out as a customizer's model rocket kit for building any one of 4 different Pegasus designs. But it turned out to be one of the best parts assortments available.

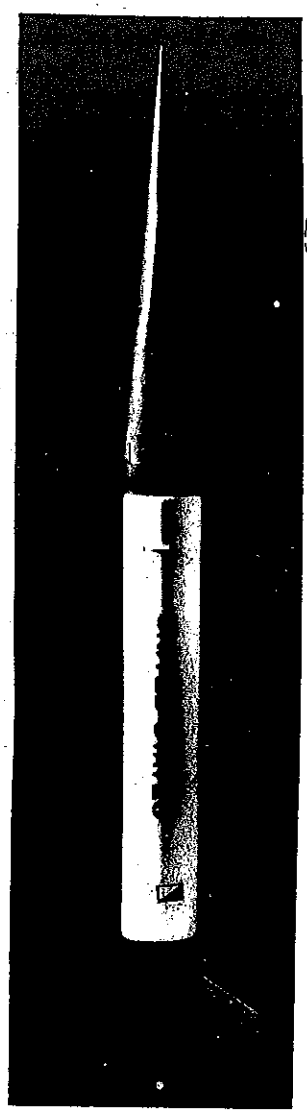
Instructions are given for building 4 different Pegasus model designs, including a 2-stage Pegasus. Or you can simply use the parts to exercise your technical creativity!

Pegasus contains the following parts:

2 ea. 19mm thrust rings
2 ea. 18mm motor compartment tubes
1 ea. T-20 x 9" body tube
1 ea. T-20 x 6" body tube
1 ea. T-20 x 2.75" body tube
1 ea. Pioneer plastic fin unit
1 ea. 3/32" sheet balsa for fins
1 ea. launch lug
1 ea. T-20 balsa coupler
2 ea. T-20 Type 620PA plastic noses
1 ea. 10-gram nose weight
2 ea. recovery streamers
2 ea. shock cords and shock locks
1 ea. decal sheet
1 ea. screw eye
2 ea. motor clips

Recommended Motors (See Kit)

No. 3-0843
$2.75

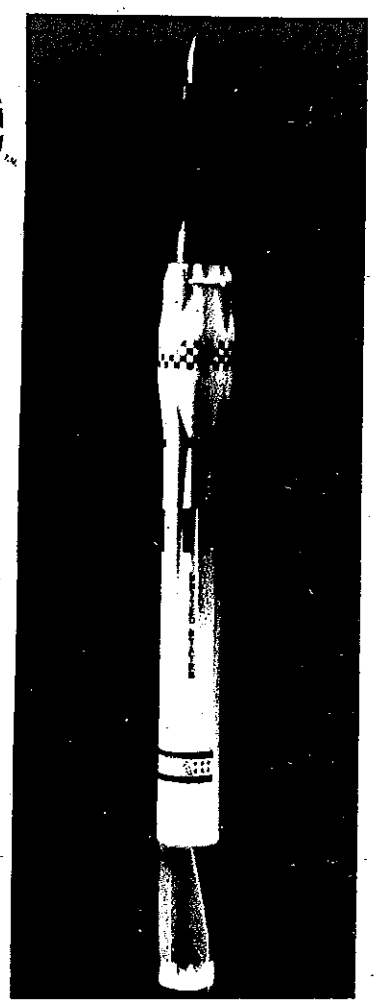


Nike Clipper

No. 3-0301
$2.00
PQ 1

AMERICAN FLYER SERIES

Yankee



ALMOST READY TO LAUNCH

A super series of new, all-plastic, almost ready to fly model rockets. The American Flyer Series featuring the Yankee 1 and Nike Clipper! They're super-detailed, super-durable and feature great new innovations like reusable wadding for less fuss and more flights. And AVI's exclusive Protect-O-Liner, an inner lining of protection that also insures easier ejection of chute, wadding and nose cone. Plus one-piece fin assembly. Huge 14" chutes. And colorful decals.

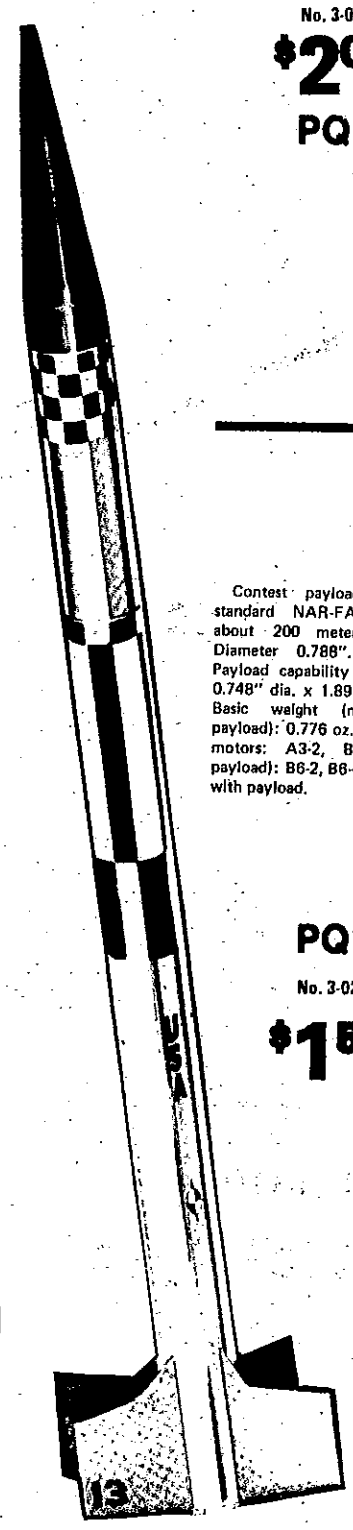
Recommended Motor C6-2 Only

No. 3-0300
$2.00
PQ 1

Patterned after NASA rocketsondes. Mini-payload compartment capable of taking payloads up to 2 oz. in space 0.55" dia. x 7.00" long. Basic booster dia. 0.788". Length 21" overall. Basic weight (no motor or payload): 0.95 oz. 10" poly recovery chute. Recommended motors: A3-2, B3-3, B6-4, or C6-6.

Theta Cajun

PQ 1
No. 3-0207
$2.25



Contest payloader. Will loft standard NAR-FAI payload to about 200 meters (650 feet). Diameter 0.788". Length 15". Payload capability 0 to 2 oz. in 0.748" dia. x 1.89" compartment. Basic weight (no motor or payload): 0.776 oz. Recommended motors: A3-2, B3-3 (with no payload): B6-2, B6-4, C6-2, or C6-4 with payload.

PQ 1
No. 3-0205
$1.50

Icarus C

Redstone Maveric

PQ 1
No. 3-0822
$1.50

With plastic space capsule nose and 4 clip-in plastic fins, Redstone Maveric is a customizer's dream with a complete selection of chrome plastic parts included. There are several ways to put this one together. Try it with 4 fins or with 3 . . . with the T-15 nose tube or without . . . with all the semi-scale detail or cleaned-up. Purists say this one is over-designed, but modelers keep on flying it because it gets up there and coughs up a big 14" chute that's easy to pack in the 30mm. paper body. This is a real fun bird. Diameter: 1.171". Length: 16". No-motor weight: 1.375 oz. Recommended motors: A3-2, B-3-3, B6-4, and C6-4.

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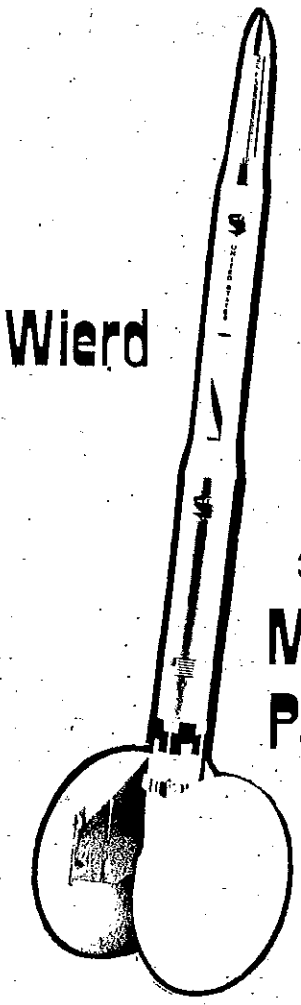


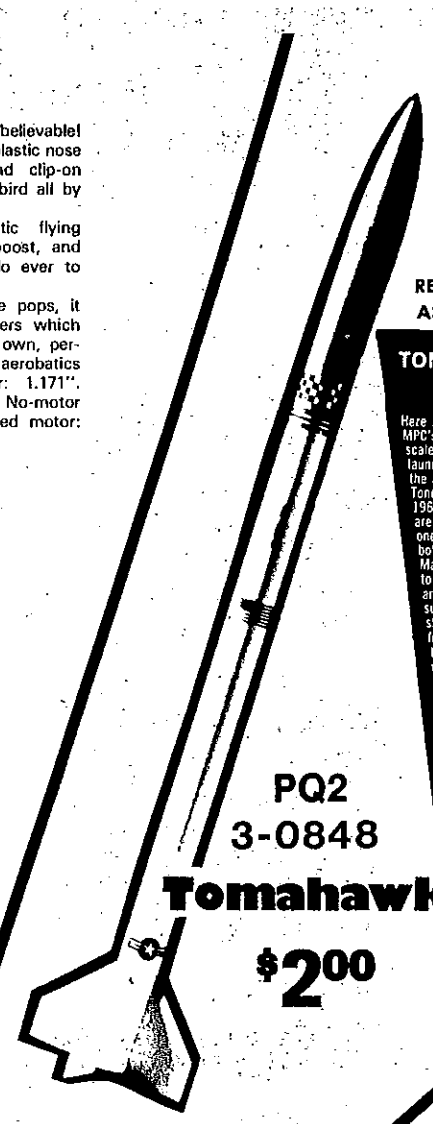
Wierd

This AVI Astroliner is unbelievable! Take a long, sleek model with plastic nose cone, transition coupler, and clip-on plastic fins; it makes a great bird all by itself.

But add two foam-plastic flying saucers to the fins during boost, and you've got the wildest wierdo ever to blast free of Planet Earth.

At apogee when the chute pops, it ejects those two flying saucers which flutter back to earth on their own, performing some of the wildest aerobatics you've ever seen. Diameter: 1.171". Length: 20". UFO diameter: 5". No-motor weight: 1.94 oz. Recommended motor: C6-4 ONLY.

PQ 3
3-0844
Martian Patrol
$2.50



Scale

RECOMMENDED ENGINES
A3-2, B3-3, B6-4

TOMAHAWK

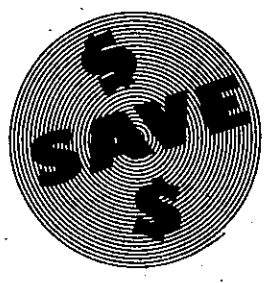
Here is a scale bird that really performs! MPC's Tomahawk model is a 1 11 421 scale model of the Thiokol Tomahawk launched by the Sandia Corporation for the Atomic Energy Commission at Tonopah, Nevada on December 6, 1957. All the details of the original are preserved in the precision one-piece plastic tail assembly—bolts, joints and airfoil shapes. Master scale modelers will want to super-detail the kit with nose antennas and details (not supplied in the kit). A long, skinny, streamlined 19 inches long, the MPC Tomahawk tips the scales at a mere 30 grams without engine. The design was perfected by G. Harry Stine working from drawings and details supplied by Sandia Corporation and Thiokol's Astro-Met Division. It's certain to be a contender in Scale and Scale Altitude categories of NAR and FAI competition.

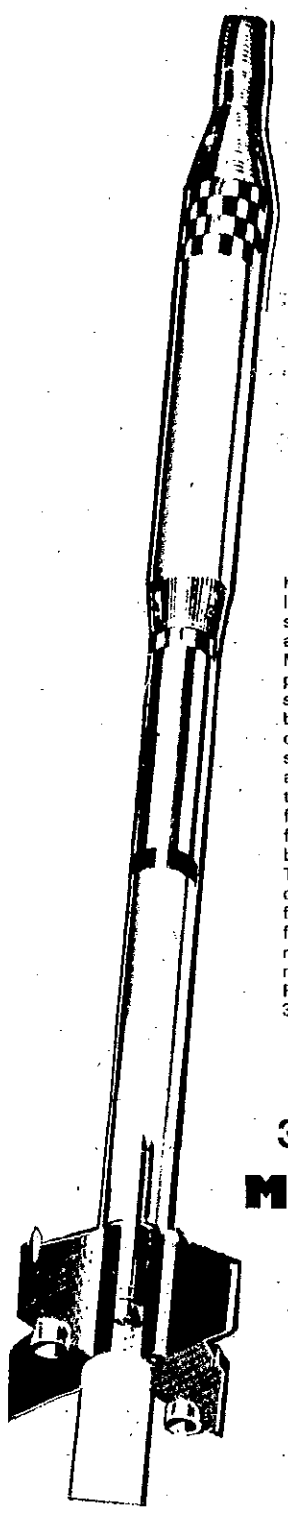
PQ2
3-0848
Tomahawk
$2.00

This one is NOT for beginners! 3-stages to loft payloads to altitudes of more than 1000 feet. Parachute recovery of top stage; tumble recovery of booster stages. Maximum payload capability: 1 oz. in 0.945" dia. x 3.15" long. Booster dia. 0.788". Length 24.75". Basic weight: (no motors or payload): 1.6 oz. Recommended motors: 1st stage C6-0 ONLY — 2nd stage C6-0 or B6-0 — top stage A3-4, B6-6, or C6-6.

PQ 3
3-0209
Microsonde 3
$2.80

"Highest Flyer"





Impressive

This big, impressive hammer-headed monster lumbers off the pad in a slow, realistic lift-off. At apogee, the sky is full of Moon Go parts as the plastic space capsule separates from the big booster body, and both come down on their separate chutes. This one is a favorite. Easy to put together. Impressive in flight. The one-piece plastic fin assembly is molded in bright fluorescent color. The kit is loaded with customizing goodies and full-color decals. This one's for fun. Diameter: 1.171" maximum. Length: 21". No motor weight: 1.87 oz. Recommended motors: B3-3, B6-4, and C6-4.

PQ 1
3-0841
Moongo
$1.75

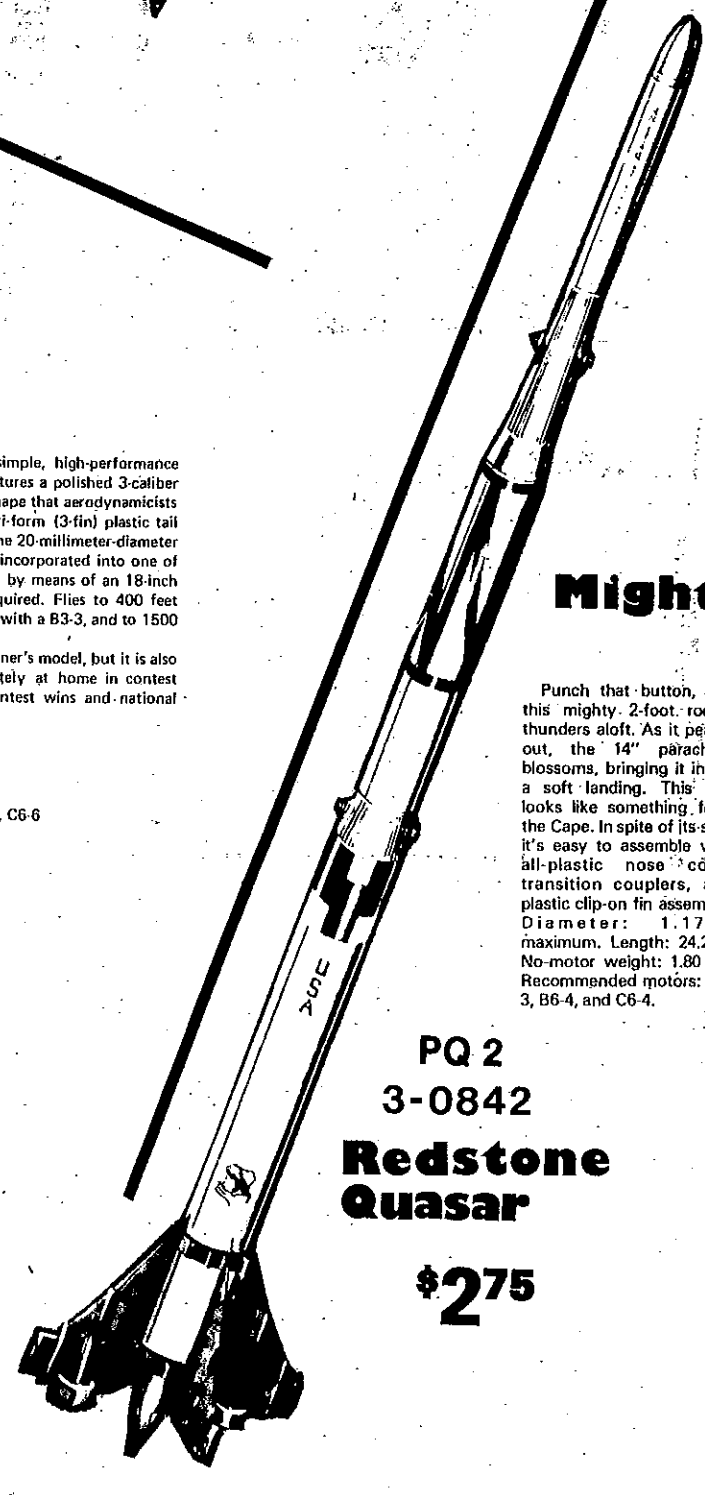
Tops

This was the first inexpensive, simple, high-performance model rocket. 12 inches long, it features a polished 3-caliber paraboloid plastic nose cone, the shape that aerodynamicists say is literally perfect. The swept tri-form (3-fin) plastic tail assembly slips over the rear end of the 20-millimeter-diameter paper body tube. The launch lug is incorporated into one of the fins for lower drag. Recovery is by means of an 18-inch streamer. No shaping or sanding required. Flies to 400 feet with a Type A3-2 motor, to 900 feet with a B3-3, and to 1500 feet with a C6-6.

Pioneer-I is not only an ideal beginner's model, but it is also a reliable performer that is completely at home in contest flying. It has a long history of contest wins and national records to its credit.

Diameter: 0.788" Length: 12"
No-motor weight: 0.81 oz.
Recommended motors:
A3-2, A3-4, B3-3, B6-4, B6-6, C6-4, C6-6

3-0810
Pioneer 1 PQ 1
$1.00



Mighty

Punch that button, and this mighty 2-foot rocket thunders aloft. As it peaks-out, the 14" parachute blossoms, bringing it in for a soft landing. This one looks like something from the Cape. In spite of its size, it's easy to assemble with all-plastic nose cone, transition couplers, and plastic clip-on fin assembly. Diameter: 1.171" maximum. Length: 24.25". No-motor weight: 1.80 oz. Recommended motors: B3-3, B6-4, and C6-4.

PQ 2
3-0842
Redstone Quasar
$2.75

AVI
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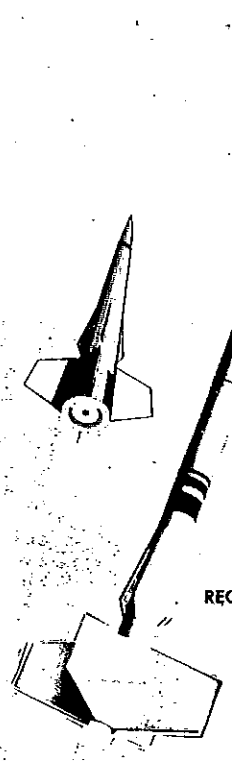
MRI

model rocket industries

SPORT MODELS with BALSA PARTS

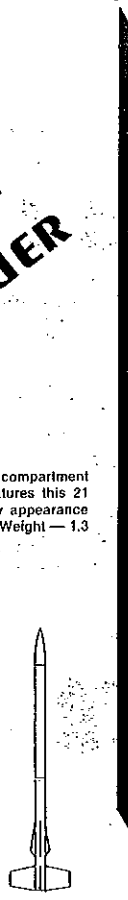


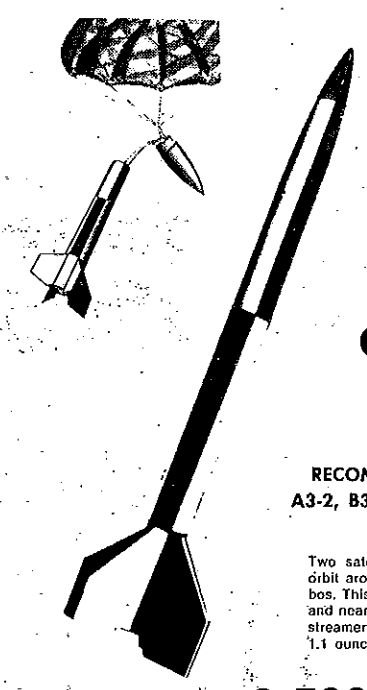
PAYLOADER

A nine inch long payload compartment and a spare parachute features this 21 inch long model. Its sporty appearance enhances every flight. Weight — 1.3 ounces.

RECOMMENDED ENGINES
A3-2, B3-3, B6-4

PQ 1
3-7207
THETA 37
$1.60



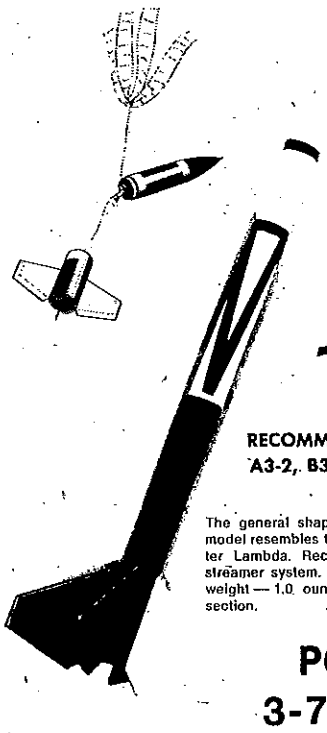


CLASS A

RECOMMENDED ENGINES
A3-2, B3-3, B6-4, C6-6, C6-4

Two satellites accompany Mars in its orbit around the Sun. Deimos and Phobos. This model is named for the larger and nearer body. Parachute recovery or streamer. Length 12.5 inches. Weight — 1.1 ounce.

3-7203
Phobos
PQ 1
$1.00

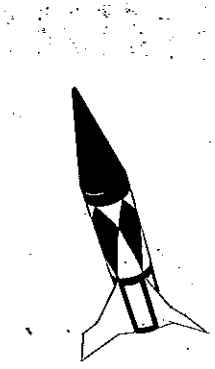


Λ8

RECOMMENDED ENGINES
A3-2, B3-3, B6-4, C6-6,

The general shape of the fins on this model resembles the Greek alphabet letter Lambda. Recovery is by a multi-streamer system. Length — 15.5 inches, weight — 1.0 ounce. Six inch payload section.

PQ 1
3-7204
LAMBDA 8
$1.25

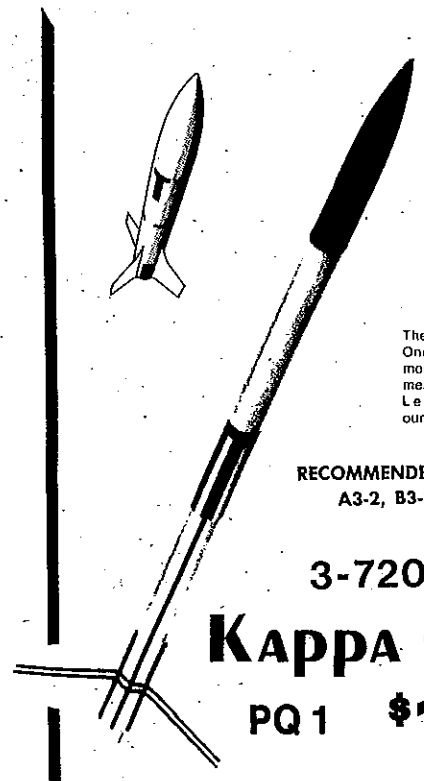


HOT!

RECOMMENDED ENGINES
A3-2, B3-3, B6-4

The Greek god Zeus ruled the heavens with thunder and lightning. This lightweight flashy model can fly high into those heavens. Streamer recovery. Nine inches long. Weighs 0.86 ounce.

PQ 1
3-7202
ZEUS
$.90

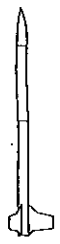


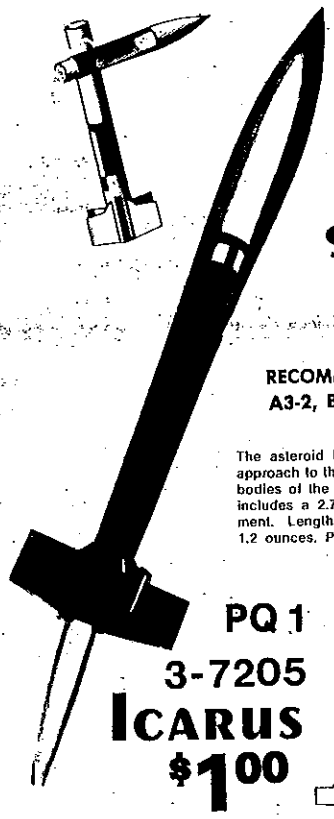
LEAN

The length and fin area of the Kappa One produces highly stable flights. The model has a six inch payload compartment and is recovered by a parachute. Length — 19 inches, weight — 1.2 ounces.

RECOMMENDED ENGINES
A3-2, B3-3, B6-4

3-7206
KAPPA ONE
PQ 1 $1.40





sleek

RECOMMENDED ENGINES
A3-2, B3-3, B6-4, C6-6,

The asteroid Icarus makes the closest approach to the Sun of any of the major bodies of the Solar System. The model includes a 2.75 inch payload compartment. Length — 15 inches, weight — 1.2 ounces. Parachute recovery.

PQ 1
3-7205
ICARUS
$1.00

HISTORIC

A semi-scale model of the United States first high altitude research vehicle. Adds realism as it streaks from the launching pad. Parachute recovery. Twelve inches long, weight — one ounce.

3-7201
WAC CORPORAL
PQ 1 $1.00

RECOMMENDED ENGINES
A3-2, B3-3, B6-4, C6-6

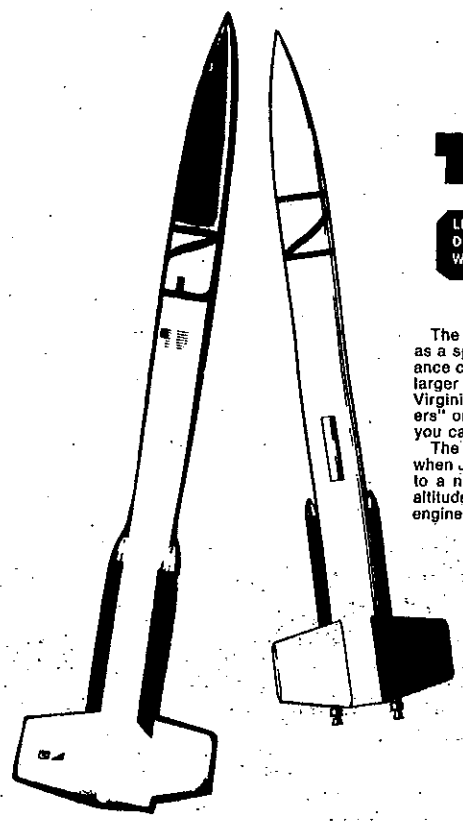
SWEPT FIN

PQ 1

RECOMMENDED ENGINES
A3-2, B3-3, B6-4

3-7208
Lepus
$1.00

Swept fins increase stability as this hot little rocket leaps into the sky. Streamer recovery brings your model safely back to Earth. The constellation Lepus, the Rabbit, is visible in the winter sky below Orion. Length — 12 inches, weight — 0.9 ounces.



PQ 1
3-0920
Taurus I™

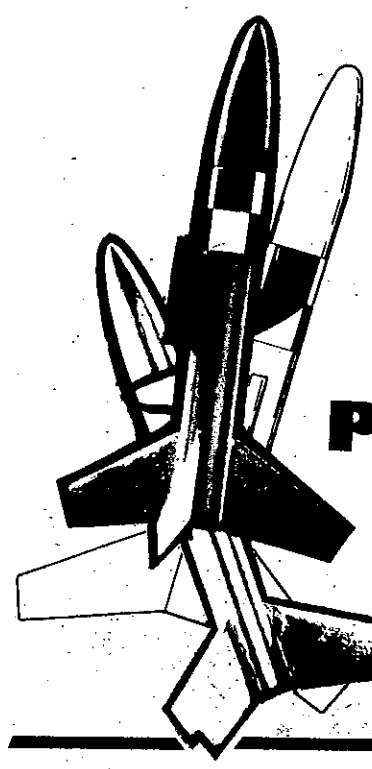
LENGTH: 9 INCHES
DIAMETER: 0.591 INCHES
WEIGHT: 11 GRAMS

$1.75

The MPC Taurus-I MINIROC model rocket was designed as a sporting model rocket to fly for fun *and* a high-performance competition model. Its appearance resembles the much larger rocketsondes flown by NASA at Wallops Station, Virginia. You have the option of mounting the side "boosters" on the model to give it a more realistic appearance, or you can leave them off for a high performance model.

The competition performance of the Taurus-I was proven when John M. Kennedy, a model rocketeer, flew his Taurus-I to a new unofficial (as of this writing) U. S. model rocket altitude record of 668 feet using a Type A3-4m MINIJET engine.

USE ONLY THE FOLLOWING MPC MINIJET ENGINES:
½A3-3m A3-4m B3-5m



MPC MINIROCS have such improved performance over ordinary model rockets that G. Harry Stine decided to go all-out in the design of a maximum-performance high-altitude competition model of the smallest size that could be put around a low-drag airframe, MINIJET engine, and streamer recovery. The result is the MPC PIPSQUEAK, the answer to the brute-force model rocketeers who are interested in sheer, all-out altitude performance.

The Pipsqueak's 3-caliber parabolic ogive nose offers the least air drag for its size and weight of any nose type. The 6-inch body tube was the shortest that would accommodate a MINIJET engine and streamer recovery system easily. The three fins were carefully designed for lowest drag, low Reynold Number, and minimum weathercocking.

It is difficult to track a Pipsqueak with a Type B3-5m MINIJET engine in it. Altitude calculations put the peak altitude in excess of 2000 feet—off the top of the charts, as a matter of fact. This was proved in May 1971 when Pipsqueaks disappeared into a 2200-foot overcast during attempts to track them for USA and international records.

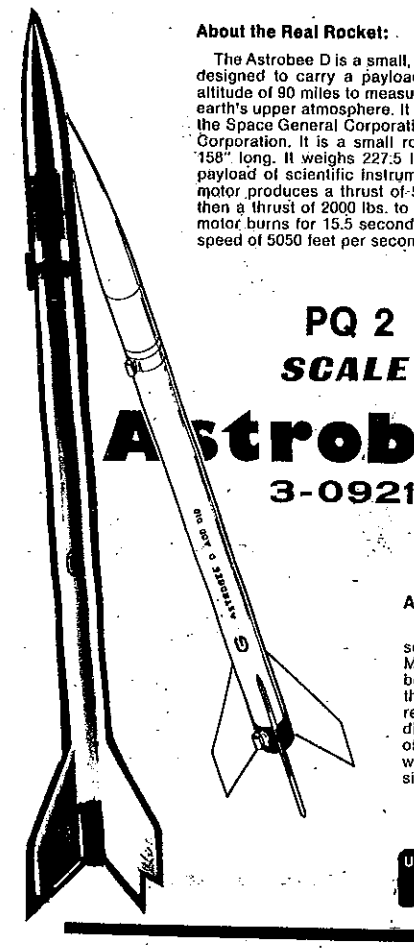
3-0915
Pipsqueak™
twin kit

$1.20

LENGTH: 6 INCHES
DIAMETER: 0.591 INCHES
WEIGHT: 6 GRAMS

PQ 1

USE ONLY THE FOLLOWING MINIJET ENGINES
½A3-5m A3-6m B3-7m



About the Real Rocket:

The Astrobee D is a small, solid-propellant sounding rocket designed to carry a payload of 7.5 to 50 pounds up to an altitude of 90 miles to measure the various phenomena of the earth's upper atmosphere. It was designed and developed by the Space General Corporation, a Division of Aerojet-General Corporation. It is a small rocket, only 6.0" in diameter and 158" long. It weighs 227.5 lb. at launch carrying a 33.5-lb. payload of scientific instruments. Its solid propellant rocket motor produces a thrust of 5200 lbs. to boost it into the air, then a thrust of 2000 lbs. to accelerate it as a sustainer. The motor burns for 15.5 seconds, boosting the Astrobee D to a speed of 5050 feet per second.

PQ 2
SCALE
Astrobee D
3-0921

$1.60

LENGTH: 15.6 INCHES
DIAMETER: 0.591 INCHES
WEIGHT: 16 GRAMS

About Your Model:

The MPC MINIROC Astrobee D scale model is an accurate scale model of the second Astrobee D flown at White Sands Missile Range, New Mexico on June 8, 1970. The model has been designed to a scale of 1 to 10.152, inches, which means that every inch on the model is equal to 10.152 inches on the real Astrobee D. The scale of the model was determined by dividing the diameter of the real rocket, 6.00" by the diameter of the model, 0.595". All dimensions of the real Astrobee D were then divided by this number to obtain the scale dimensions of the model.

USE ONLY THE FOLLOWING MPC MINIJET ENGINES:
½A3-3m A3-4m B3-5m

The ORIGINAL MINIROCS™
" BEWARE of High Priced IMITATIONS "

PQ 1
3-0910
Super Star™

LENGTH: 9 INCHES
DIAMETER: 0.591 INCHES
WEIGHT: 10 GRAMS

$1.00

The MPC Super/Star MINIROC model rocket was specifically designed as a high-performance competition model in the altitude classes. Its small size gives it 36% less frontal area drag than any previous model rocket. It uses three special fins with Fehsken-Isaac low-drag tips to reduce performance-chopping fin tip vortices.

The MPC Super/Star was flown to a new USA unofficial (as of this writing) Class O Altitude record of 662 feet using an MPC Type A3-4m MINIJET engine by Connie and Ellie Stine. This same team of two sisters also set an unofficial (as of this writing) USA record in Design Efficiency with their MPC Super/Star of 96.8 meters per Newton-second using an MPC Type 1/2A3 MINIJET.

USE ONLY THE FOLLOWING MPC MINIJET ENGINES:
½A3-5m A3-6m B3-7m

SCALE
Asp I
3-0922
PQ 2

$1.50

LENGTH: 13 INCHES
DIAMETER: 0.591 INCHES
WEIGHT: 17 GRAMS

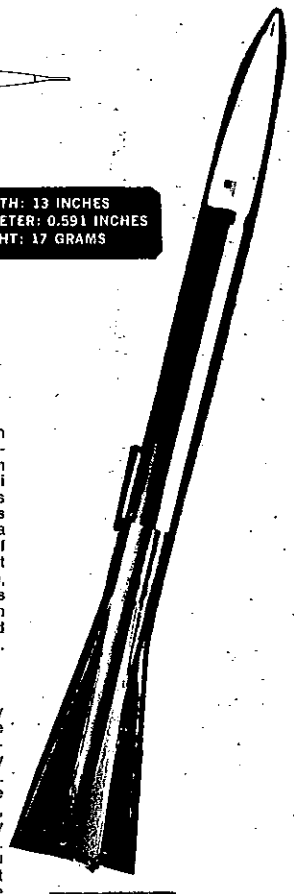
About the Real Rocket:

The ASP-I sounding rocket was originally designed in 1955 by Horning-Cooper, Inc. under a Navy contract to supply a means of making measurements inside the mushroom clouds of thermonuclear explosions in the Pacific at Bikini Atoll. The ASP was 6.50" in diameter and 144.0" long. It was propelled by a solid rocket motor generating 5850 pounds of thrust for 6.0 seconds. This accelerated the rocket to a speed of 5350 feet per second and enabled 25 pounds of scientific instruments to ascend to 200,000 feet. The rocket was stabilized by four fins and was launched from a simple, rugged rail launcher. It was flight tested at White Sands Proving Ground in February, 1956 and used in Operation Redwing at Bikini in mid-1956. Following this, ASP was used as the second stage of the Nike-Asp rocketsonde by NASA.

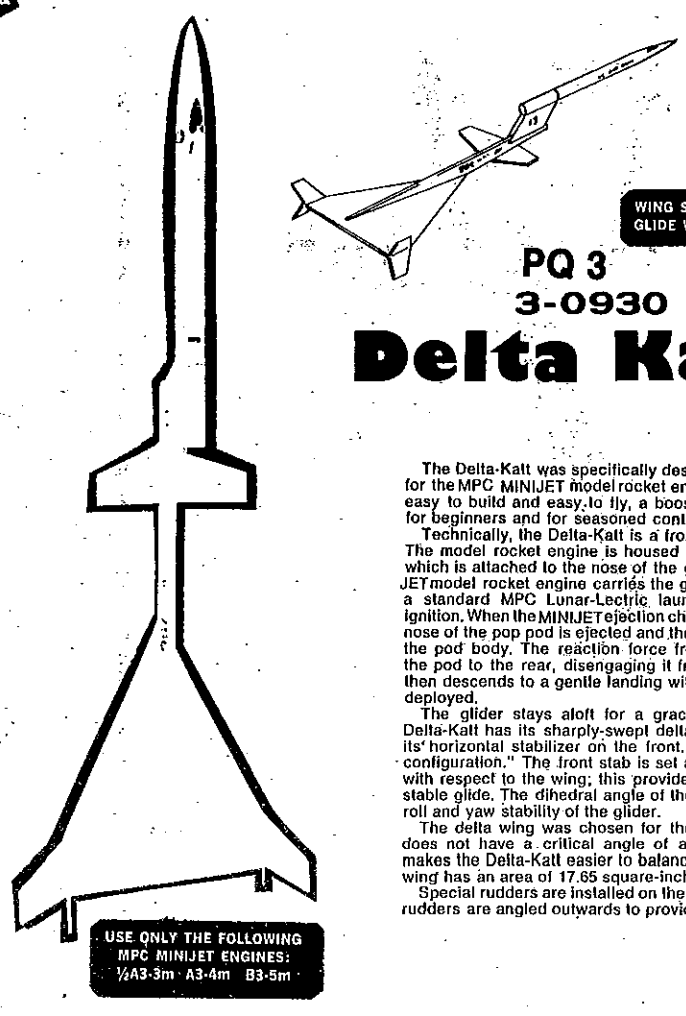
About Your Model:

This is an accurate scale model of the ASP designed by G. Harry Stine who was also the operations engineer for the real Asp at White Sands in 1956. The model has been designed to a scale of 1 to 10.998, which means that every inch on the model equals about 11 inches on the real Asp. The scale of the model was determined by dividing the diameter of the real Asp, 6.50", by the diameter of the model, 0.595". All dimensions of the real Asp were then divided by this number to reveal the dimensions of the scale model.

MPC MINIROC ASP scale models identical to the one you can build from this kit have established two unofficial (at this writing) United States performance records for altitude with a scale model propelled by a Type A engine and an international world record as well. The world record, set under rules of the Federation Aeronautique Internationale, was made by Connie and Ellie Stine who flew their ASP-I to an altitude of 756 feet with a MINIJET Type A3-4m engine.



USE ONLY THE FOLLOWING MPC MINIJET ENGINES:
½A3-3m A3-4m B3-5m



WING SURFACE: 17.65 SQ. IN.
GLIDE WEIGHT: 5 GRAMS

PQ 3
3-0930
Delta Katt™

$2.25

The Delta-Katt was specifically designed by G. Harry Stine for the MPC MINIJET model rocket engines. The Delta-Katt is easy to build and easy to fly, a boost-glider that is suitable for beginners and for seasoned contest fliers as well.

Technically, the Delta-Katt is a front engined canard B/G. The model rocket engine is housed in a separable pop-pod which is attached to the nose of the glider portion. The MINIJET model rocket engine carries the glider and pod aloft from a standard MPC Lunar-Lectric launch pad using electric ignition. When the MINIJET ejection charge goes off, the balsa nose of the pop pod is ejected and the streamer comes out of the pod body. The reaction force from this ejection forces the pod to the rear, disengaging it from the glider. The pod then descends to a gentle landing with its recovery streamer deployed.

The glider stays aloft for a graceful gliding flight. The Delta-Katt has its sharply-swept delta wing on the rear and its horizontal stabilizer on the front. This is called "canard configuration." The front stab is set at a 5-degree incidence with respect to the wing; this provides the Delta-Katt with a stable glide. The dihedral angle of the front stab adds to the roll and yaw stability of the glider.

The delta wing was chosen for the Delta-Katt because it does not have a critical angle of attack for stalling. This makes the Delta-Katt easier to balance for gliding flight. The wing has an area of 17.65 square-inches.

Special rudders are installed on the tip of each wing. These rudders are angled outwards to provide stability in roll.

ANTARQUI

MAIL ROCKET

ANTARQUI is the God of Flight of the INCA INDIANS of Central and South America.

Maybe he is symbolic of the "Ancient Astronauts" who are the subject of so much conjecture today.

AVI Astroport commemorates his existence with the First Design in our anticipated fleet of Mail Rockets.

THE ROCKET:

The Antarqui rocket stands over 29 inches tall. The lower power and parachute compartment section is 25 mm (1 inch) in diameter and 30 cm (12 inches) long. A 35 mm diameter 20+cm long MAIL COMPARTMENT tops the power and recovery section. A clear payload compartment just below the nosecone is provided to carry the brightly colored FLIGHT CERTIFICATE. The flight certificate contains information on return of the mail to you should the rocket drift away and be lost. Plastic Fins, nose and couplers. Dual parachute recovery.

THINK OF THE FUN:

Become a rocket-postmaster. Fly rocket post cards for your own amusement or for others. You prepare the cards for flight, cancel the special LOCAL ROCKET POST STAMPS with your own signature or initials just as the early rocket research pioneers did when trying to raise funds for their researches.

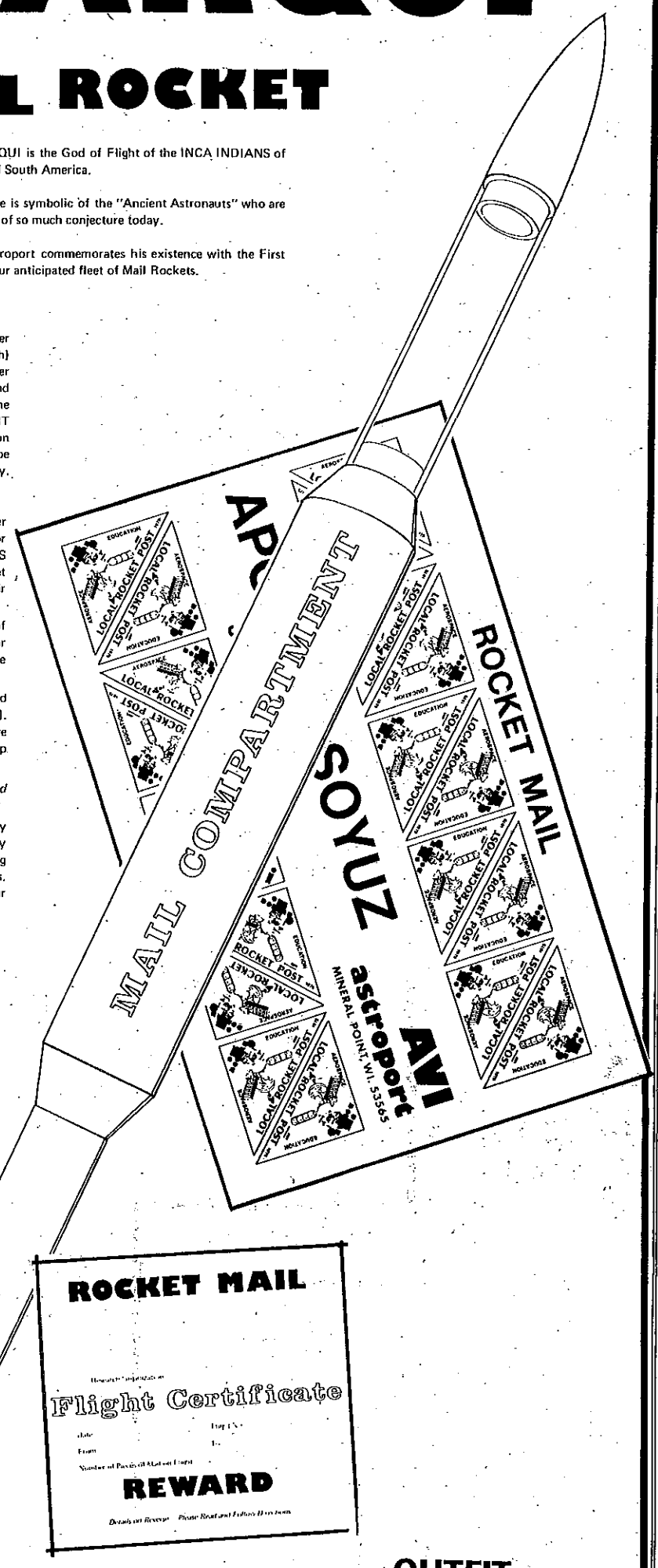
The triangular rocket post stamp is placed on the reverse of the rocket postcard so not to be confused with regular postage. Flight information goes on the card along with the message and on the front you place a regular US stamp.

Load the mail into the rocket. Insert the proper motor and launch. (Motors and launch system not included with outfit). Recover and finish recording flight. Check that the cards are addressed properly and have the correct US postage and drop them in the mail box.

Think of the surprise on the other end when your friend receives a piece of mail that actually flew in a rocket.

..... Possibly you can support your hobby or club by sending rocket mail for other people in the area who may enjoy having a unique sample of mail for themselves or having you fly and post a message to one or more of their friends. The local rocket post stamps (twenty are included in your outfit) have a value of $1 printed on them.

We couldn't wait to try it, CAN YOU?



Complete Outfit
3-0002
PQ 3

ONLY
$5.95

Recommended Motor
B6-4 or C6-4.

OUTFIT INCLUDES

1 – Antarqui Rocket Kit
20 – Local Rocket Post Stamps
20 – Rocket Post Cards
3 – Flight Certificates
3 – Flight Registration Cards
1 – Registration Form with Number
1 – Rocket Post Manual

"EACH ROCKET is REGISTERED"

OVER 6 FEET TALL

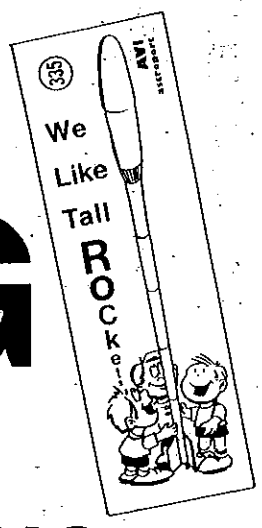
PQ 2
3-0001
$2.95

"Too Long to illustrate effectively"

World's Longest Model Rocket in Kit form

* Plastic Nose Cone, Coupler and Fin Unit.
* Float Recovery
* 20 M.M. Diameter Body

Recommended Motor
B6-2 or C6-4.



LG

OR

LINÆUS GIGANTUS

AVI
astroport